

What is claimed is:

1. A heavy chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., which comprises an amino acid sequence selected from the group
5 consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38.
2. A light chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., which
10 comprises an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.
3. A DNA molecule encoding a heavy chain variable region
15 of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., wherein the heavy chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38.
- 20 4. The DNA molecule according to claim 3, wherein the DNA comprises a nucleotide sequence selected from the group consisting of SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23 and SEQ ID NO:37.
- 25 5. A DNA molecule encoding a light chain variable region of an antibody specific to a surface antigen in sporozoite

of *Eimeria* spp., wherein the light chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

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6. The DNA molecule according to claim 5, wherein the DNA comprises a nucleotide sequence selected from the group consisting of SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, SEQ ID NO:31 and SEQ ID NO:39.

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7. A recombinant scFv antibody specific to a surface antigen in sporozoite of *Eimeria* spp., which comprises:

(a) a heavy chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., comprising an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38; and

(b) a light chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., comprising an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

8. The recombinant scFv antibody according to claim 7, wherein the heavy chain variable region comprises the amino acid sequence of SEQ ID NO:18 and the light chain variable region comprises the amino acid sequence of SEQ

ID NO:26.

9. The recombinant scFv antibody according to claim 7,
wherein the heavy chain variable region comprises the
5 amino acid sequence of SEQ ID NO:20 and the light chain
variable region comprises the amino acid sequence of SEQ
ID NO:28.

10. The recombinant scFv antibody according to claim 7,
10 wherein the heavy chain variable region comprises the
amino acid sequence of SEQ ID NO:22 and the light chain
variable region comprises the amino acid sequence of SEQ
ID NO:30.

11. The recombinant scFv antibody according to claim 7,
15 wherein the heavy chain variable region comprises the
amino acid sequence of SEQ ID NO:24 and the light chain
variable region comprises the amino acid sequence of SEQ
ID NO:32.

20 12. The recombinant scFv antibody according to claim 7,
wherein the heavy chain variable region comprises the
amino acid sequence of SEQ ID NO:38 and the light chain
variable region comprises the amino acid sequence of SEQ
25 ID NO:40.

13. The recombinant scFv antibody according to claim 7,

wherein the scFv antibody further comprises a linker between the heavy chain variable region and the light chain variable region.

5 14. A DNA molecule encoding scFv antibody specific to a surface antigen in sporozoite of *Eimeria* spp., which comprises:

(a) a DNA molecule encoding a heavy chain variable region of an antibody specific to a surface antigen in
10 sporozoite of *Eimeria* spp., wherein the heavy chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38; and

(b) a DNA molecule encoding a light chain variable
15 region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., wherein the light chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

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15. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:18 and the DNA molecule
25 encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:26.

16. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:20 and the DNA molecule
5 encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:28.

17. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain
10 variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:22 and the DNA molecule encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:30.

18. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:24 and the DNA molecule
15 encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:32.
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19. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino
25 acid sequence of SEQ ID NO:38 and the DNA molecule encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:40.

20. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding scFv antibody further comprises a DNA molecule encoding linker between
5 the DNA molecule encoding the heavy chain variable region and the DNA molecule encoding the light chain variable region.

21. The DNA molecule encoding scFv antibody according to
10 any one of claims 14-20, wherein the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:18 comprises DNA molecule of SEQ ID NO:17, the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:20
15 comprises DNA molecule of SEQ ID NO:19, the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:22 comprises DNA molecule of SEQ ID NO:21, the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ
20 ID NO:24 comprises DNA molecule of SEQ ID NO:23, and the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:38 comprises DNA molecule of SEQ ID NO:37.

22. The DNA molecule encoding scFv antibody according to
25 any one of claims 14-20, wherein the DNA molecule encoding the light chain variable region comprising the amino acid

sequence of SEQ ID NO:26 comprises DNA molecule of SEQ ID
NO:25, the DNA molecule encoding the light chain variable
region comprising the amino acid sequence of SEQ ID NO:28
comprises DNA molecule of SEQ ID NO:27, the DNA molecule
5 encoding the light chain variable region comprising the
amino acid sequence of SEQ ID NO:30 comprises DNA molecule
of SEQ ID NO:29, the DNA molecule encoding the light chain
variable region comprising the amino acid sequence of SEQ
ID NO:32 comprises DNA molecule of SEQ ID NO:31, the DNA
10 molecule encoding the light chain variable region
comprising the amino acid sequence of SEQ ID NO:40
comprises DNA molecule of SEQ ID NO:39.